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F.O. 12/29/00
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CLAIMS

What is claimed is:

Pablo A. 1. An apparatus comprising:
2. a plurality of strobe inputs to receive a plurality of strobe signals;
3. a plurality of data inputs to receive a plurality of data signals transmitted in
4. a transaction in conjunction with said plurality of strobe signals in a
5. source synchronous manner;
6. bus control logic to produce an externally visible indication that an error
7. has occurred if a glitch on one or more of said plurality of strobe
8. signals is detected.

Pablo A. 1. ~~2.~~ The apparatus of claim 1 wherein said bus control logic is to produce the externally
2. visible indication that the error has occurred by retrying the transaction.

Pablo A. 1. ~~3.~~ The apparatus of claim 1 wherein said bus control logic is to disregard data signals
2. latched in conjunction with said glitch.

Pablo A. 1. ~~4.~~ The apparatus of claim 3 wherein said bus control logic is to initiate said
2. transaction by requesting a data item, and wherein said bus control logic is further to
3. initiate a second transaction to retrieve said data item in response to said glitch being

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4 detected.

1 5. The apparatus of claim 2 wherein said bus control logic is also, in response said
2 error, to stop sending additional bus requests, and to disregard data received in
3 conjunction with said transaction.

1 6. The apparatus of claim 5 wherein said bus controller is to retry said transaction
2 after waiting until no further strobes are outstanding.

1 7. A bus agent comprising:
2 a plurality of data signal inputs to receive a plurality of data signals;
3 a plurality of strobe inputs to receive a plurality of strobe signals;
4 a state machine coupled to receive said plurality of strobe signals and to
5 generate therefrom a plurality of clock signals;
6 a strobe glitch detection circuit to monitor said plurality of clock signals
7 produced by said state machine to detect glitches on one or more of
8 said plurality of strobe signals.

1 8. The bus agent of claim 7 wherein said state machine is to receive two
2 complementary strobe signals and to generate therefrom four non-overlapping clock
3 signals, said four non-overlapping clock signals having sequential active periods, and

Draft → 4 wherein said strobe glitch detection circuit is coupled to receive two clock signals of
5 said four non-overlapping clock signals, and further wherein said strobe glitch
6 detection circuit is to generate an error signal if a first one of said two clock signals is
7 in an incorrect state at a time determined from the other one of said two clock signals.

1 9. The bus agent of claim 8 wherein said strobe glitch detection circuit is to generate
2 the error signal if the first one of said two clock signals is in the incorrect state after a
3 delay duration.

Draft → 10. The bus agent of claim 9 wherein said four non-overlapping clocks have a
2 substantially similar active period, and wherein said delay duration is less than a
3 duration of said active period.

1 11. The bus agent of claim 7 wherein said plurality of strobe signals is a first set of a
2 first number of strobe signals and wherein said plurality of clocks are a second set of a
3 second number of clocks, said second number being twice the first number, said
4 plurality of clocks being non-overlapping clocks.

1 12. The bus agent of claim 7 wherein said plurality of data signals comprise a
2 plurality of sets of data signals, each set having an associated strobe and an inverted
3 strobe signal, and wherein said strobe glitch detection circuit comprises a plurality of

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4 strobe glitch detectors, each of said plurality of strobe glitch detectors being coupled to
5 receive a first clock signal and a second clock signal from said plurality of clock
6 signals and to generate a glitch indicator signal if said second clock signal is in an
7 incorrect state after a predetermined duration measured from a transition of the first
8 clock signal.

1 13. The bus agent of claim 12 wherein each glitch detector comprises:
2 a delay circuit to receive said first clock signal and to generate a delayed
3 first clock signal;
4 a latch clocked by said delayed first clock signal, said latch being a falling
5 edge clock triggered latch, said latch having a data input coupled to
6 receive said second clock signal and to generate an output error signal
7 if said second clock signal is absent when a falling edge of the delayed
8 first clock signal clocks the latch.

1 14. The bus agent of claim 13 wherein said output error signal is further coupled to
2 said latch to retain the output error signal in an active state until a reset signal is
3 received.

1 15. The bus agent of claim 14 further comprising:
2 a bus controller to retry a transaction during which a strobe glitch is

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detected in response to detection of said strobe glitch.

- 1 16. The bus agent of claim 15 wherein said bus controller is also, in response said
- 2 output error signal, to stop sending additional bus requests, to disregard data received
- 3 in conjunction with said transaction, and to reset each glitch detector.

- 1 17. The bus agent of claim 16 wherein said bus controller is to reset each glitch when
- 2 no further strobes are outstanding.

- 1 18. The bus agent of claim 7 further comprising:
 - 2 a bus controller to retry a transaction during which a glitch is detected by
 - 3 said strobe glitch detection circuit.

- 1 19. A system comprising:
 - 2 a first bus agent capable of generating data signals and accompanying
 - 3 strobe signals for source synchronous transmission of at least a portion
 - 4 of a transaction;
 - 5 a second bus agent capable of detecting a glitch on said strobe signals, said
 - 6 second bus agent retrying said transaction in response to the glitch
 - 7 being detected.

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1 20. The system of claim 19 wherein said second bus agent is to disregard data signals
2 latched in conjunction with said glitch.

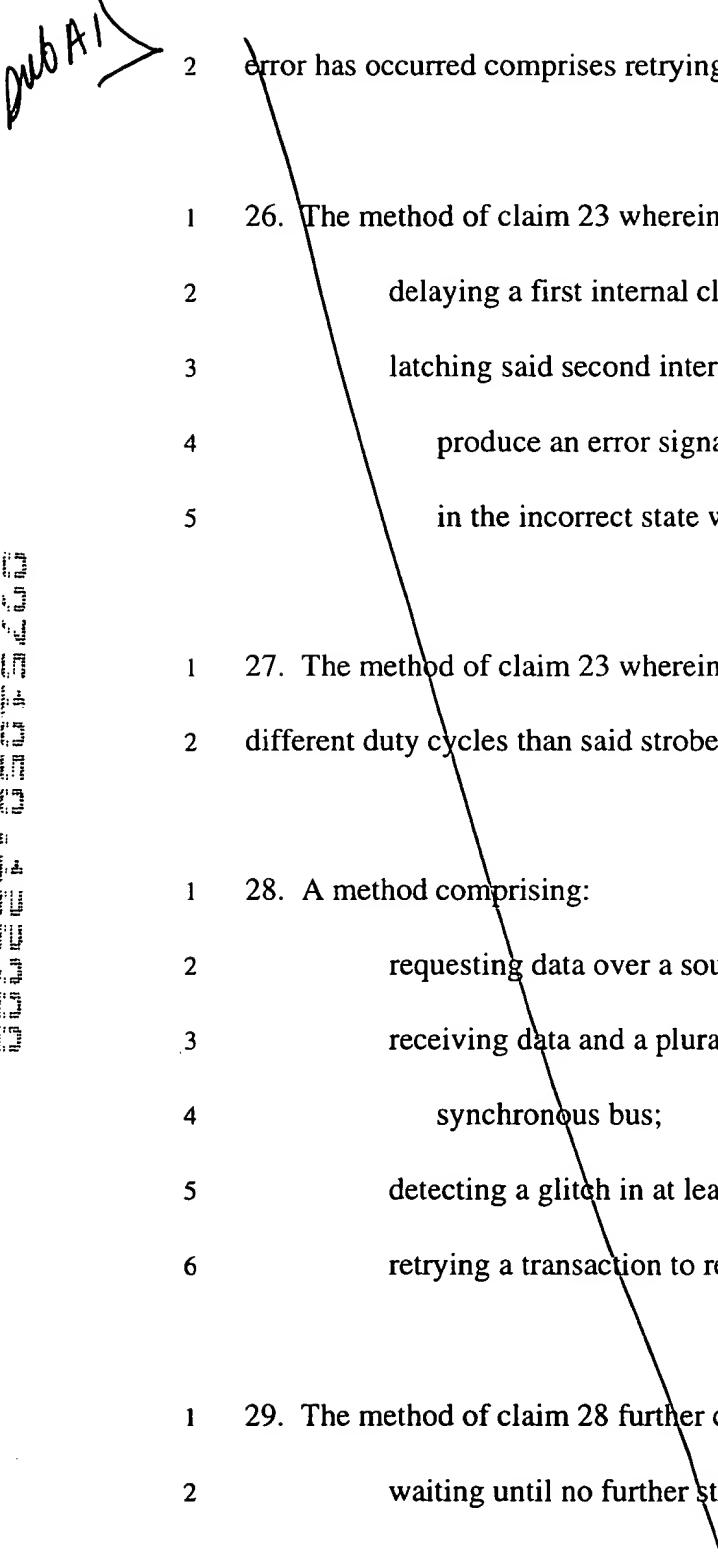
1 21. The system of claim 20 wherein said second bus agent is to retry said transaction
2 after waiting until no further strobes are pending.

1 22. The system of claim 19 wherein said second bus agent is to retry said request
2 without signaling an error or requesting system restart.

1 23. A method comprising:
2 receiving a plurality of strobe signals;
3 generating a plurality of internal clock signals from said plurality of strobe
4 signals;
5 detecting one of said plurality of internal clock signals being in an incorrect
6 state with respect to another one of said plurality of internal clock
7 signals.

1 24. The method of claim 23 further comprising:
2 producing an externally visible signal that an error has occurred.

1 25. The method of claim 24 wherein producing an externally visible signal that the

sub A1  2 error has occurred comprises retrying a data transfer during which the error occurred.

1 26. The method of claim 23 wherein detecting comprises:

2 delaying a first internal clock to produce a delayed first internal clock;
3 latching said second internal clock with said delayed first internal clock to
4 produce an error signal in response to said second internal clock being
5 in the incorrect state when latched by said delayed first internal clock.

1 27. The method of claim 23 wherein said plurality of internal clock signals have
2 different duty cycles than said strobe signals.

1 28. A method comprising:

2 requesting data over a source synchronous bus;
3 receiving data and a plurality of strobe signals over said source
4 synchronous bus;
5 detecting a glitch in at least one of said plurality of strobe signals; and
6 retrying a transaction to retrieve said data.

1 29. The method of claim 28 further comprising:

2 waiting until no further strobes are pending to retry said transaction.

- 1 30. The method of claim 29 further comprising:
 - 2 disregarding any data latched in conjunction with said glitch.